

unpatentable over GB 1585392 (“GB ‘392”) in view of Chen. The examiner has rejected claims 51-55 under 35 U.S.C. § 103(a) as being unpatentable over GB ‘392 in view of Caldwell. The examiner has objected to claim 34 based on a matter of form.

Applicants respectfully traverse each of the foregoing bases for rejection and objection and request reconsideration and withdrawal thereof.

1. **Chen Does Not Disclose A Light Emitting Device That Is Electrically Connected To A Substrate Defining A Penetration.**

Claim 1 recites:

An integrated low profile display, comprising:

a substrate having a first surface and a second surface;

said substrate defining at least one penetration extending through said substrate from said first surface to said second surface;

each said penetration having a side wall, an entrance opening defined by said first surface, and an exit opening defined by said second surface; and

at least one light emitting device;

each said light emitting device mounted to said first surface of said substrate proximate the entrance opening of a corresponding penetration and adapted to selectively admit light to said penetration via said entrance opening; and

each said light emitting device being electrically connected to a corresponding electrical conductor disposed on said substrate.

Applicants respectfully submit that Chen does not disclose the foregoing combination of elements.

Chen discloses a reflector (*i.e.*, a first substrate) defining a plurality of penetrations and a printed circuit board (*i.e.*, a second substrate) bearing a plurality of light emitting diodes. Importantly, the printed circuit board of Chen, *i.e.*, the second substrate on which the light emitting diodes are mounted and to which they are electrically connected, does not define any penetrations. Thus,

Chen does not disclose “a substrate defining at least one penetration” and “at least one light emitting device . . . mounted to said first surface of said substrate proximate the entrance opening of a corresponding penetration . . . each said light emitting device being electrically coupled to a corresponding electrical conductor disposed on said substrate.” (Emphasis added.)

Based on at least the above, Applicants respectfully submit that claim 1 is allowable over the cited prior art, as are claims 2-28 which depend from claim 1. As such, Applicants respectfully submit that the examiner’s further bases for rejection of claims 2-28 are moot. Applicants respectfully request reconsideration and allowance of claims 1-28.

**2. GB ‘392 Teaches Away From An Opaque Sidewall.**

Claim 29 recites a substrate defining at least one cavity having an entrance opening and a closed end, said cavity having a substantially opaque side wall. The examiner has acknowledged that GB ‘392 does not disclose a substrate defining a cavity having a substantially opaque side wall, but has stated that it “would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the side wall of the cavity by the substantially opaque as taught by Chen for purpose of increasing brightness output.” Applicants respectfully disagree and submit that neither GB ‘392 nor Chen provides any motivation to combine these references.

Indeed, a person of ordinary skill in the art at the time the invention was made would understand GB ‘392 to teach away from such a combination. GB ‘392 teaches that a transparent sidewall is desirable to enable light to disperse through the substrate:

It is understood that the radiation of the diode should be capable of directly illuminating the part of the inscription 5 represented on the drawing, but this radiation also travels transversely in the panel to contribute with other luminous diodes to the illumination of other distant inscriptions.”

GB '392 at p. 2, ll. 63-69 (emphasis added). Modifying the side wall of the cavity disclosed in GB '392 as the examiner has suggested would render the resulting device unable to perform the function recited above. As such, Applicants submit that the instant obviousness rejection is improper and respectfully request reconsideration and withdrawal thereof.

Based on at least the above, Applicants respectfully submit that claim 29 is allowable over the cited prior art, as are claims 30-55 which depend from claim 29. As such, Applicants respectfully submit that the examiner's further bases for rejection of claims 30-55 are moot.

**3. The Limitation Set Forth In Claim 34 Is Unique.**

The examiner has objected to claim 34 on the grounds that "the limitation 'the side wall is covered with a substantially opaque material', is repeated." Applicants respectfully disagree.

Claim 34 in its entirety recites:

34. The apparatus of claim 29 wherein said side wall is covered with a substantially opaque material.

Claim 29 from which claim 34 depends recites more broadly "said cavity having a substantially opaque side wall." Claim 29 is silent on the mechanism by which the side wall is opaque and, therefore, covers a side wall that is opaque by means other than an opaque material covering said sidewall. For example, without limitation, the side wall recited in claim 29 could be opaque because the material comprising the substrate defining the side wall is itself opaque, thus obviating the need for, but not precluding the use of, an opaque covering on the side wall. As such, Applicants submit that claim 34 is narrower than and not duplicative of claim 29.

Applicants respectfully submit that the application is in condition for allowance and respectfully request reconsideration and allowance thereof.

Respectfully submitted,



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